

Material Safety Data Sheets

1. Product and Company Identification

Product Name	: Pigment Ink For Textile Cyan
Product Code	: SPC-0350C
General Use	: Ink jet printing ink
Product Description	: Pigment ink
MSDS Number	: 031-33W03CC
Manufacture	
Company Name	: Mimaki Engineering Co., Ltd
Address	: 2182-3 Otsu, Shigeno, Tomi-shi, Nagano 389-0512 Japan
Telephone No.	: +81-268-64-2413
Importer/Distributor Established in USA	
Company Name	: MIMAKI USA. INC.
Address	: 150 Satellite Boulevard, suite A, Suwanee, Georgia 30024, U.S.A
Telephone No.	: 1-678-730-0100
Emergency Telephone No.	: +81-268-64-2413

2. Hazards Identification

Emergency Overview	: Inhalation of vapor or mist can cause headache, nausea and irritation of the nose, throat and lungs. Causes severe eye irritation. Prolonged or repeated overexposure to the solvent(s) in this material can cause the following: liver damage, kidney damage, embryofetotoxic effects Prolonged or repeated overexposure to carbon black can cause lung effects.
Potential Health Effects	
Inhalation	: Inhalation of solvent vapor or mist can cause the following: irritation of nose, throat, and lungs headache, nausea
Eye Contact	: Direct contact with material can cause the following: Severe irritation, tearing, reddening
Skin Contact	: Material can cause the following: slight irritation

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- Ingestion : Material is possibly harmful if swallowed.
 Material can cause the following:
 Abdominal pain, Vomiting, nausea, depression,
 diarrhea, gastrointestinal irritation, dizziness
- Carcinogens : Prolonged or repeated overexposure to carbon black can cause lung effects.
 C.I. Pigment Blue 15
 IRIS: Not classified.
- Potential Environmental Effects : Prolonged or repeated overexposure to the solvent(s) in this material can cause the following:
 kidney damage, liver damage
- Medical conditions : No medical conditions are known to be aggravated by exposure to SPC-0350C INK.

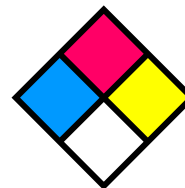
HMIS Rating (scale 0 – 4)

Health = 2*
 Flammability= 0
 Reactivity = 0

3	Health
4	Flammability
3	Reactivity
G	Protective Equipment

NFPA Rating (scale 0 – 4)

Health =
 Flammability =
 Instability =
 Special =



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3. Composition / Information On Ingredients

No	Chemical Name	Wt%	CAS No.	Chemical Formula
1	Acrylic polymer(s)	5.0-7.0%	Not Hazardous	Trade Secret
2	C.I. Pigment Blue 15	2.0-4.0%	147-14-8	Trade Secret
3	Residual monomers	<100.0 PPM	Not Required	C ₃₂ H ₁₆ CuN ₈
4	Glycols	11.0-13.0%	Trade Secret	Trade Secret
5	Pyrrolidone	7.0-9.0%	616-45-5	C ₄ H ₇ NO
6	Anionic / nonionic surfactant(s)	2.0-4.0%	Trade Secret	Trade Secret
7	Water	64.0-67.0%	7732-18-5	H ₂ O

OSHA Hazardous Components (29 CFR 1910.1200) : This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

4. First Aid Measures

Inhalation : Move to fresh air. Give artificial respiration if breathing has stopped. Consult a physician.

Eye Contact : Immediately flush eye(s) with plenty of water. Get prompt medical attention.

Skin Contact : Wash with water and soap as a precaution. If skin irritation persists, call a physician. Wash contaminated clothing before reuse.

Ingestion : Drink 1 or 2 glasses of water. Consult a physician. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep airway clear.

Note To Physician : Treatment may vary with condition of victim and specifics of incident.

5. Fire Fighting Measures

Flammable Properties Flash point: Noncombustible
 Lower explosion limit: Not applicable

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Thermal decomposition	Upper explosion limit: Not applicable Combustion generates toxic fumes of the following: nitrogen oxides (NO _x), Carbon oxides, sulfur oxides.
Extinguishing Media	: Use the following extinguishing media when fighting fires involving this material: polar solvent (alcohol) foam Water spray Dry chemical Carbon dioxide (CO ₂)
Fire Fighting Instructions	: Wear full fire-fighting turn-out gear (full bunker gear) and respiratory protection (self-contained breathing apparatus). Evacuate area and fight fire from a safe distance. Containers can rupture and release highly toxic vapors or decomposition products if exposed to heat. Dried product can burn. Material can splatter above 100C/212F.
Further information	: Remain upwind. Avoid breathing smoke. Use water spray to cool unopened containers.

6. Accidental Release Measures

METHODS FOR CLEANING UP	: Contain spilled liquid with sand or earth. DO NOT use combustible materials, such as sawdust. Eliminate all ignition sources, use explosion-proof equipment. Vacuum or sweep material and place in a disposal container. The material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water.
HANDLING	: Avoid contact with skin, eyes and clothing. Do not breathe (dust, vapor, mist, gas). Wash thoroughly after handling. Use only clean, dry utensils in handling. Keep container tightly closed. Store in a cool, dry, well ventilated place. Destroy contaminated shoes in proper manner.

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STORAGE	: Solidifies at about 5 - 25 °C (41 - 77 °F) and may break container. Keep from freezing - product stability may be affected.
SPECIFIC USES	: Formaldehyde will be generated under acidic conditions. Maintain adequate ventilation under these conditions to prevent exposure to formaldehyde above ceiling of 0.3 ppm.
FURTHER INFORMATION	: Monomer vapors can be evolved when material is heated during processing operations. See SECTION 8, for types of ventilation required. Improper disposal or re-use of this container may be dangerous and illegal. Refer to applicable local, state and federal regulations. Dispose empty container in a sanitary landfill or by incineration as allowed by state and local authorities.

7. Handling And Storage

HANDLING	: Avoid contact with skin, eyes and clothing. Do not breathe (dust, vapor, mist, gas). Wash thoroughly after handling. Use only clean, dry utensils in handling. Keep container tightly closed. Store in a cool, dry, well ventilated place. Destroy contaminated shoes in proper manner.
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8. Exposure Controls / Personal Protection

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Exposure Limit Values

No	Chemical Name		TWA	STEL	Ceiling	Skin	REL
1	Modified Carbon black	OSHA PEL	3.5 mg/m ³	N.E	N.E	N.E	N.E
		ACGIH TLV	3.5 mg/m ³	N.E	N.E	N.E	N.E
		NIOSH/GUIDE	N.E	N.E	N.E	N.E	1mg/m ³
2	Glycols	OSHA PEL	N.E	N.E	N.E	N.E	N.E
		ACGIH TLV	N.E	N.E	N.E	N.E	N.E
	Pyrrolidone	OSHA PEL	N.E	N.E	N.E	N.E	N.E
		ACGIH TLV	N.E	N.E	N.E	N.E	N.E

Exposure Controls

Occupational Exposure Controls

Engineering Controls : Use local exhaust ventilation with a minimum capture velocity of 100 ft/min. (0.5 m/sec.) at the point of vapor evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Personal Protection

Respiratory Protection : A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the exposure limit listed in Exposure Limit Information. Up to 10 times the exposure limit: Wear a properly fitted NIOSH approved (or equivalent) half-mask, air-purifying respirator. Up to 1000 ppm organic vapor: Wear a properly fitted NIOSH approved (or equivalent) full-facepiece, air-purifying respirator, OR full-facepiece, airline respirator in the pressure demand mode. Above 1000 ppm organic vapor or Unknown: Wear a properly fitted NIOSH approved (or equivalent) self-contained

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breathing apparatus in the pressure demand mode, OR full-facepiece, airline respirator in the pressure demand mode with emergency escape provision. Air-purifying respirators should be equipped with NIOSH approved (or equivalent) organic vapor cartridges and R95 or P95 filters.

Hand Protection



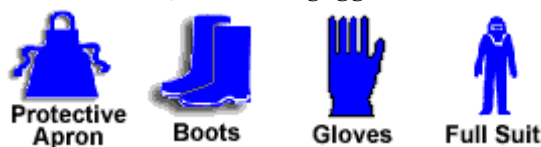
Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation. (Gloves of other chemically resistant materials may not provide adequate protection): Neoprene gloves. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water.

Eye Protection



Wear coverall, chemical goggles and face shield when handling.

Skin Protection



To prevent any contact, wear impervious clothing such as gloves, apron, boots, or whole body suits made from neoprene, as appropriate.

Environmental Exposure Controls

: Not available

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9. Physical And Chemical Properties

Appearance	- Physical state	: liquid
	- Colour	: Blue-green
Odour		: mild
pH		: 7.5 - 9.5
Boiling Point / Boiling Range		: 100 °C (212.00 °F) Water
Melting Point / Merging Range		: Not available
Decomposition Temperature		: Not available
Flash Point		: Noncombustible
Auto-Ignition Temperature		: Not available
Flammability(solid, gas)		: Not available
Vapour Pressure		: 17.0 mmHg at 20 °C (68 °F) Water
Specific Gravity		: 0.95 - 1.05
Solubility		: Not available
Water solubility		: Dilutable
Viscosity		: 2.500 - 4.000 mPa.s
Vapour density		: <1.0Water
Evaporation Rate		: <1.00 Water
VOC		: 14.0g/l

10. Stability And Reactivity

Conditions To Avoid	: Thermal decomposition may yield acrylic monomers.
Stability	: Product will not undergo polymerization.
Materials To Avoid	: Avoid contact with acids, alkalies and strong oxidizing agents.
Hazardous Reactions/	: This material is considered stable.
Decomposition Products	However, avoid temperatures above 177C/350F, the onset of polymer decomposition. Thermal decomposition is dependent on time and temperature.

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11. Toxicological Information

Acute Toxicity	Component: Glycols		
	Oral LD ₅₀	Dermal LD ₅₀	Inhalant LC ₅₀
	>10,000 mg/kg(rat)	>10,000 mg/kg(rabbit)	
	Component: C.I. Pigment Blue 15		
	Oral LD ₅₀	Dermal LD ₅₀	Inhalant LC ₅₀
	> 5,000 mg/kg(rat)		
Eye Irritation	: Not available		
Skin Irritation	: rabbit slight irritation		
Sensitization	: Patch test on human volunteers did not demonstrate sensitization properties.		
Mutagenicity	: Not available		
Carcinogenicity	: Not available		

12. Ecological Information

	Handling is noted because it might influence the environment when leaking and abandoning it.
	Especially, note that the product doesn't flow directly to ground, the river, and the drain ditch.
Ecotoxicity	: Toxicity to fish LC50 100 mg/l
	Toxicity to aquatic invertebrates EC50 Daphnia magna 100 mg/l
Persistence And	: Not available
Degradability	
Bioaccumulative Potential	: Not available
Other Adverse Effects	: Not available

13. Disposal Considerations

: When a decision is made to discard this material as supplied, it does



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not meet RCRA's characteristic definition of ignitability, corrosivity, or reactivity, and is not listed in 40 CFR 261.33. The toxicity characteristic (TC), however, has not been evaluated by the Toxicity Characteristic Leaching Procedure (TCLP).

Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations.

Comply with all EU, national and local regulations.

Do not dump this product into sewers, on the ground or into any body of water.

14. Transport Information

Check a thing without a leak in a container.

Perform prevention of collapse of cargo surely.

UN Class/UN Number: Not applicable

DOT, IMO/IMDG : Not applicable

15. Regulatory Information

OSHA Status : This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

TSCA Status : All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Cercla Reportable : Not Applicable

Quantity
(40 CFR 117, 302)

SARA Title III

Section 302 : Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304.

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Section 311/312 : Acute Health Hazard
(40 CFR 370)

Section 313 : This product does not contain a chemical which is listed in Section
(40 CFR 372) 313 at or above de minimis concentrations.

Pennsylvania : The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components:

Formaldehyde

Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 3, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

California : This product contains trace levels of a component or components
(Proposition 65) known to the state of California to cause cancer:

Components:

Ethyl acrylate 140-88-5

Formaldehyde 50-00-0

Others : This product is a 'controlled product' under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Please refer to any other federal, state and local regulations.

16. Other Information

This information is furnished without warranty, express or implied, except that it is accurate to the best knowledge of Mimaki Engineering Corporation.

It relates only to the specific material designated herein, and dose not relate to use in combination with any other material or process.

Mimaki Engineering Corporation assumes no legal responsibility for use or reliance upon this information.

Revision history

Version	Date	Content
1.00	Oct 18, 2007	First issue
2.00	Jun 13, 2008	No.9 VOC